

APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Please replace the first full paragraph on page 2 with the following:

Cross Reference to Related Applications: This application is a divisional of application Serial No. 08/887,381, filed July 2, 1997, [pending] now United States Patent 6,159,764, issued December 12, 2000. This application is related to a co-pending application entitled "LEAD FRAME ASSEMBLIES WITH VOLTAGE REFERENCE PLANE AND IC PACKAGES INCLUDING SAME," filed July 2, 1997, having Serial No. 08/888,336, now [U.S.] United States Patent 5,955,777, issued September 21, 1999, and commonly assigned with the present application.

IN THE CLAIMS:

A marked-up version of each of the presently amended claims, highlighting the changes thereto, follows:

1. (Twice Amended) An integrated circuit (IC) package comprising:
a package body;
an IC die positioned within the package body;
a lead frame including a plurality of leads having portions enclosed within the package body that connect to the IC die; and
an electrically conductive heat sink positioned at least partially within the package body with a surface of a first portion of the heat sink facing the lead frame in close proximity to a substantial part of the enclosed portion of at least eighty percent of the area of each of the plurality of leads of the lead frame and with a die-attach area on the surface of the first portion of the heat sink attached to the IC die, a second portion of the heat sink projecting away from the first portion of the heat sink under the die-attach area and the IC die, the

heat sink coupled to one of a signal voltage and a reference voltage so the heat sink operates respectively as a signal plane and a ground plane for the plurality of leads of the lead frame.

2. (Amended) The IC package of claim 1, wherein the package body is selected from a group [comprising] consisting of a transfer molded plastic package body and a preformed ceramic package body.
3. (Amended) The IC package of claim 1, wherein the IC die is selected from a group consisting of [comprising] a Dynamic Random Access Memory (DRAM) IC die, a Static Random Access Memory (SRAM) IC die, a Synchronous DRAM (SDRAM) IC die, a Sequential Graphics Random Access Memory (SGRAM) IC die, a flash Electrically Erasable Programmable Read-Only Memory (EEPROM) IC die, and a processor IC die.
4. (Amended) The IC package of claim 1, wherein the lead frame is selected from a group consisting of [comprising] a peripheral-lead finger lead frame, a Leads Over Chip (LOC) lead frame, and a Leads Under Chip (LUC) lead frame.
6. (Amended) The IC package of claim [5] 1, wherein the heat sink is coupled to the reference voltage through one of a wirebond, a conductive adhesive, and a welded connection.
9. (Twice Amended) The IC package of claim 1, wherein the heat sink is coupled to a printed circuit board outside the package body [and is] thereby coupled to one of a signal voltage and a reference voltage [so the heat sink operates respectively as a signal plane and a ground plane for the plurality of leads of the lead frame].

22. (Twice Amended) An electronic system comprising an input device, an output device, a memory device, and a processor device coupled to the input, output, and memory devices, at least one of the input, output, memory, and processor devices including an integrated circuit (IC) package comprising:

- a package body;
- an IC die positioned within the package body;
- a lead frame including a plurality of leads having portions enclosed within the package body that connect to the IC die; and
- an electrically conductive heat sink positioned at least partially within the package body with a surface of a first portion of the heat sink facing the lead frame in close proximity to a substantial part of the enclosed portion of at least eighty percent of the area of each of the plurality of leads of the lead frame and having a die-attach area on the surface of the first portion of the heat sink attached to the IC die, a second portion of the heat sink being opposite the die-attach area and projecting away from the first portion of the heat sink and the IC die.

24. (Twice Amended) An integrated circuit (IC) package comprising:

- a package body;
- an IC die positioned within the package body;
- a lead frame including a plurality of leads having portions enclosed within the package body that connect to the IC die; and
- an electrically conductive heat sink positioned at least partially within the package body with a vertically extending columnar portion surrounded by a horizontally extending skirt portion having a lead frame attachment surface proximate a die-attach surface substantially vertically aligned with the columnar portion, the lead frame attachment surface being attached to the lead frame and extending in close proximity to a substantial part of the enclosed portions of at least eighty percent of the area of the plurality of leads of the lead frame, the die-attach surface being attached to the IC die.

25. (Twice Amended) An integrated circuit (IC) package comprising:
an IC die;
a lead frame including a plurality of leads having portions that are connected to the IC die; and
an electrically conductive heat sink positioned having a surface of a first portion of the heat sink facing the lead frame in close proximity to a substantial part of an enclosed portion of at least eighty percent of the area of each of the plurality of leads of the lead frame and with a die-attach area on the surface of the first portion of the heat sink attached to the IC die, a second portion of the heat sink projecting away from the first portion of the heat sink under the die-attach area and the IC die, the heat sink coupled to one of a signal voltage and a reference voltage for the heat sink to operate respectively as a signal plane and a ground plane for the plurality of leads of the lead frame.

27. (Amended) The IC package of claim 26, wherein the package body is selected from a group consisting of [comprising] a transfer molded plastic package body and a preformed ceramic package body.

28. (Amended) The IC package of claim 25, wherein the IC die is selected from a group consisting of [comprising] a Dynamic Random Access Memory (DRAM) IC die, a Static Random Access Memory (SRAM) IC die, a Synchronous DRAM (SDRAM) IC die, a Sequential Graphics Random Access Memory (SGRAM) IC die, a flash Electrically Erasable Programmable Read-Only Memory (EEPROM) IC die, and a processor IC die.

29. (Amended) The IC package of claim 25, wherein the lead frame is selected from a group consisting of comprising a peripheral-lead finger lead frame, a Leads Over Chip (LOC) lead frame, and a Leads Under Chip (LUC) lead frame.

31. (Amended) The IC package of claim [30] 25, wherein the heat sink is coupled to the reference voltage through one of a wirebond, a conductive adhesive, and a welded connection.